

CALATHEA RHIZANTHOIDES AND C. PEREGRINA (MARANTACEAE),
NEW SPECIES ENDEMIC TO PANAMA

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ABSTRACT

Calathea rhizanthoides H. Kenn., sp. nov. and *C. peregrina* H. Kenn., sp. nov., both endemic to Panamá, are described as new for inclusion in Flora Mesoamericana. *Calathea rhizanthoides* is characterized by the single leaf per shoot and the inflorescence usually borne on a separate, leafless, shoot directly from the rhizome. It differs from *C. verecunda* H. Kenn. by the broader leaf blades (9.1–16.5 vs. 4–8 cm), the bracts with rounded vs. acute to acuminate apices and from *C. cleistantha* Standl. by the single vs. 2–4(–9) leaves per shoot. *Calathea peregrina* differs from the closely related *C. portobelensis* H. Kenn. in the narrower angle of divergence of the lateral veins from the midrib (38°–47° vs. 46°–62°) and the more widely spaced lateral veins (11–14 vs. 17–22 per 3 cm).

RESUMEN

Calathea rhizanthoides H. Kenn., sp. nov. y *C. peregrina* H. Kenn., sp. nov., ambas endémicas de Panamá, son descritas como nuevas para su inclusión en Flora Mesoamericana. *Calathea rhizanthoides* se caracteriza por tener solo una hoja por brote y la inflorescencia en un brote aparte, sin hojas, que sale directamente del rizoma. Se diferencia de *C. verecunda* H. Kenn. por sus láminas foliares más anchas (9.1–16.5 vs. 4–8 cm), las brácteas con el ápice redondeado vs. agudo o acuminado, y de *C. cleistantha* Standl. por tener una sola hoja en vez de 2–4(–9) hojas por brote. *Calathea peregrina* difiere de la estrechamente relacionada *C. portobelensis* H. Kenn. por el ángulo de divergencia de las venas laterales del nervio medio más angosto (38°–47° vs. 46°–62°) y venas laterales más distanciadas (11–14 vs. 17–22 por 3 cm).

In the Flora of Panama (Woodson & Schery 1945), a total of 23 species of Marantaceae were listed with 14 in the genus *Calathea*. By 1972, Dressler (1972: 184) reported 35 species and recently Kennedy (2011: 201) reported a total of 59 species of Marantaceae from Panama. Currently 65 species of Marantaceae (ca. 182% increase from the 1945 Flora of Panama treatment) are recognized from Panama of which 47 are in the genus *Calathea*. Seventeen species are endemic, including the two described herein. *Calathea*, which is restricted to the Neotropics, is the largest genus within the Marantaceae with approximately 286 species, comprising roughly 57% of the Neotropical Marantaceae species. The majority of *Calathea* species are South American with Brazil (at least 95) and Ecuador (at least 66) being the most diverse. For the whole of Central America, including Mexico, there are but 75 currently recognized species of *Calathea*.

TAXONOMIC TREATMENT

Calathea rhizanthoides H. Kenn., sp. nov. (**Fig. 1**). TYPE: PANAMA. PANAMA: Km 16 on the road to Cartí (El Llano-Cartí road), wet forest, ca. 350 m, 23 Mar 1973, H. Kennedy & R.L. Dressler 2908 (HOLOTYPE: PMA; ISOTYPES: MEXU, MO, UCR).

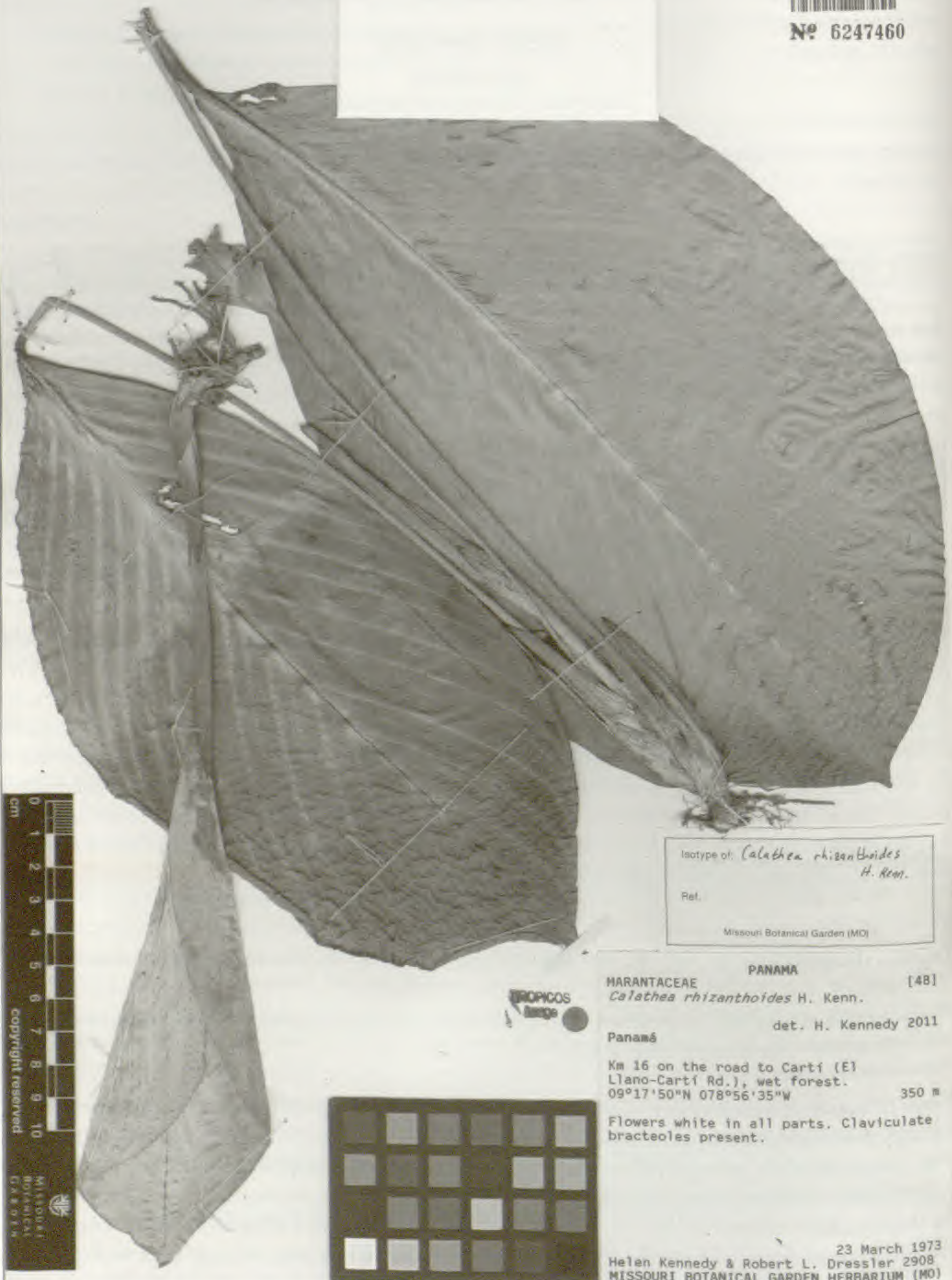
Haec species a *Calathea verecunda*. foliis latioribus (9.1–16.5 vs. 4–8 cm) atque bracteis viridibus (vs. purpureis) apice rotundatis (vs. acutis vel acuminatis), a *C. cleistantha* foliis plerumque minoribus (17–30 × 9.1–16.5 vs. 25–54 × 12–22), folio in quoque surculo solitario (vs. foliis 2 ad 9) atque bracteolis claviculatis praesentibus distinguitur.

Plants rhizomatous, perennial herbs, 36–55 cm high; the inflorescence may terminate a single-leaved shoot but more commonly is borne on a leafless shoot directly from the rhizome; cataphylls herbaceous, narrowly ovate, obtuse, apiculate, minutely puberulent along margins, innermost cataphyll 6–15 cm. **Leaves** 2–5 from a single rhizome, each leaf borne separately from the rhizome, or a leaf may subsequently develop in the axil of the cataphyll subtending an inflorescence; leaf sheath not auriculate (apical margins of sheath not extended above junction of sheath with petiole), green, subglabrous except at very base and onto node sericeous, (1–

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Isotype of: *Calathea rhizanthoides*
H. Kenn.

Ret.

Missouri Botanical Garden (MO)

PANAMA

MARANTACEAE

[48]

Calathea rhizanthoides H. Kenn.

det. H. Kennedy 2011

Panamá

Km 16 on the road to Carti (El
Llano-Cartí Rd.), wet forest.
09°17'50"N 078°56'35"W

350 m

Flowers white in all parts. Clavicate
bracteoles present.

23 March 1973
Helen Kennedy & Robert L. Dressler 2908
MISSOURI BOTANICAL GARDEN HERBARIUM (MO)

FIG. 1. *Calathea rhizanthoides* H. Kenn. Isotype (Kennedy & Dressler 2908, MO). Photo provided by Missouri Botanical Garden.

2.8–9.5(–14) cm; petiole bearing a distinct groove adaxially, green, scattered tomentose, hairs more concentrated apically, abaxially and in adaxial groove, 7–25.5 cm; pulvinus ellipsoid in cross-section, olive-green, densely tomentose in a band adaxially, sides glabrous, abaxially sparsely pubescent, 0.6–1.2 cm; leaf blade elliptic to obovate, apex obtuse to rounded with an acumen, base attenuate to cuneate, 17–30 × 9.1–16.5 cm in basal leaves, (length:width ratios 1.67–2.12:1), lateral veins 13–18 per 3 cm, cross veinlets 20–25 per 5 mm (veins measured at midpoint of each side of blade, ruler at right angles to veins), vein angles from midrib 28°–39°, measured at midpoint of blade, the adaxial surface green, glabrous, midrib densely minutely appressed tomentose centrally, hairs golden brown, 0.2 mm, the abaxial surface minutely pubescent along veins (20× magnif.) near midrib, toward margin pubescence only on major veins, midrib sparsely minutely appressed tomentose, hairs golden brown, ca. 0.1 mm. **Inflorescence** terminal, 1 per shoot, usually borne on a separate leafless shoot, imbricate, obovoid, occasionally ellipsoid, 2.4–3.2 × 1.1–1.8 cm; peduncle green, very sparsely minutely puberulent (20× magnif.), hairs colorless, 0.1–0.25 mm, 11.5–24(–29.5) cm. **Bracts** 5–9, spirally arranged, herbaceous, lowermost one transversely broadly elliptic, apex rounded with acumen to 0.5 cm, second broadly elliptic, upper ones obovate, apex rounded with short acumen, apex very slightly spreading, 1.6–2 × 1.5–2.3 cm, each bract subtending up to 5 or more flower pairs, abaxial surface of bracts light green, minutely tomentose, hairs colorless, 0.5 mm, hairs more dense along margin in apical third, adaxial surface minutely tomentose in apical half; bicarinate prophyll membranaceous, elliptic, apex obtuse to rounded, minutely sparsely pilose at apex, including area between the carina, ca. 1.5 × 1 cm, 0.6 cm wide, carina to carina; secondary bract membranaceous, elliptic, ca. 1.6 × 0.7 cm; bracteoles 3 per flower pair, 1 medial, clavicate, 1.3–1.55 cm, 2 lateral, membranaceous, channeled, narrowly ovate-triangular, acute, ca. 1.3 × 0.25 cm. **Flowers** open spontaneously, white throughout. **Sepals** membranaceous, narrowly elliptical, acute, glabrous, ca. 13 × 3 mm. **Corolla** tube glabrous, ca. 23 mm; corolla lobes subequal, elliptic, obtuse, glabrous except for a minute tuft of hairs at the very tip, hairs 0.2 mm, 9–10 × ca. 4 mm. **Staminodes** 3; outer staminode ellipsoid, clawed at base, cupped, ca. 8 mm; callose staminode petaloid apically, ca. 9 mm; anther 1.5–2 mm; ovary smooth, glabrous, ca. 2.5 × 1.5 mm. **Capsule** unknown.

Additional specimens examined: **PANAMÁ. San Blas:** Cerro Obu, assoc: *Wettinia*, *Calypstrogyne*, *Pholldostachys mooreana*, *Prestoea* & *Bonofousia sanano*, 400–500 m, 25 Jun 1986, G. de Nevers et al. 8073 (MO); trail to Cerro Obu (Habu of maps) from Río Urgandi (Río Sidra), assoc: *Bonofousia undulata*, 100–300 m, 9°23'N, 78°48'W, 25 Jun 1986, G. de Nevers et al. 8020 A (MO).

Distribution and habitat.—*Calathea rhizanthoides* is endemic to Panamá. It is known from only two collections, one on the Pacific slope in Panama Prov. and the other from a somewhat higher elevation, Cerro Obu, just into Comarca de San Blas but close to the border with Panamá Province, both in wet forest habitats.

DISCUSSION

Calathea rhizanthoides belongs to *Calathea* sect. *Breviscapus* Benth. in the broad sense. It is readily distinguished from other Panamanian species by the single leaf per aerial shoot, the elliptic to obovate leaf blade, the inflorescence of 5–8 bracts, usually borne on a separate leafless shoot, the presence of both membranous and clavicate bracteoles and the white flowers. In *C. verecunda*, the leaves are often borne singly and the inflorescences borne on separate, leafless shoots. However, *C. verecunda* differs in having narrower leaf blades, 4–8 vs. 9.1–16.5 cm; purple vs. green bracts with acute to acuminate vs. rounded apices and bracteoles 4, all membranous vs. 2 membranous and 1 clavicate. *Calathea cleistantha* also has inflorescences borne on separate shoots but has more numerous inflorescences, 2–4(–9) vs. 1, as well as larger leaves, 25–54 × 12–22 vs 17–30 × 9.1–16.5 cm, and lacks clavicate bracteoles. However, both *C. elegans* H. Kenn. and *C. robin-fosteri* H. Kenn. also have membranous as well as clavicate bracteoles but have narrowly elliptic leaves over 30 cm long vs. elliptic to obovate leaves 30 cm long or less.

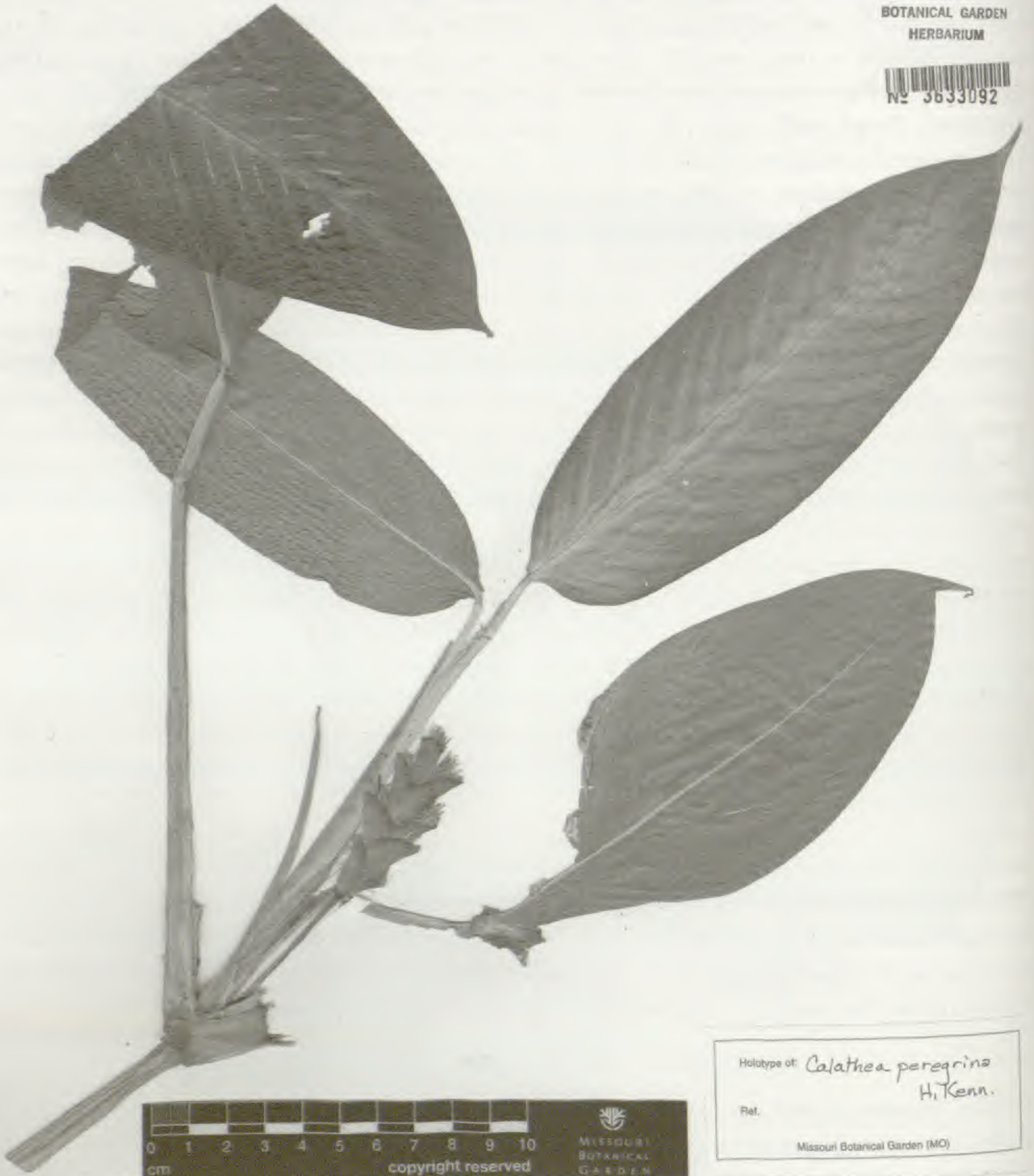
Etymology.—The specific epithet, *rhizanthoides*, refers to the inflorescence borne on a separate shoot directly from the rhizome as in *Calathea rhizantha* K. Schum.

***Calathea peregrina* H. Kenn., sp. nov. (Fig. 2).** TYPE: PANAMÁ. DARIEN: Río Masargandi, tributary of Río Sucubti, Masargandi, 200 m, 3 Feb 1977, R.L. Dressler 5600 (HOLOTYPE: MO 3633092).

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Holotype of: *Calathea peregrina*
H. Kenn.

Rel.

Missouri Botanical Garden (MO)

FLORA Mesoamericana

Calathea peregrina H. Kenn. sp. nov.
1989

Det. Helen Kennedy Aug 2010 (UCR)

PLANTS OF PANAMA
prov. Darién

Calathea portobelensis Kennedy

Masargandí, on Rio Masargandí, tributary of Rio
Sucubti, elev. 200 m.; 3 February 1977.

Stem to 1 m. tall; flowers white.

Collected by: Robert L. Dressler

No. 5600

Determined by: H. Kennedy 1989

FIG. 2. *Calathea peregrina* H. Kenn. Holotype (Dressler 5600, MO). Photo provided by Missouri Botanical Garden.

Haec species a *Calathea portobelensis* venis lateralibus dissitioribus (11 ad 14 vs. 17 ad 22 per 3 cm) angulum minorem (38° – 47° vs. 46° – 62°) cum costa plerumque formantibus atque vena minore inter venis lateralibus majoribus plerumque solitaria (vs. venis minoribus 3) distinguitur.

Plants rhizomatous, perennial herbs, ca. 1.3 m high; stem ca. 1 m, glabrous apically. **Leaves** 2 or more cauline, basal leaves present, details unknown; leaf sheath not auriculate when petiole present, auriculate (apical margins of sheath extended above junction of sheath with petiole), if petiole absent, green, densely tomentose apically, especially the auriculate portion and along margin in upper 1–2 cm, sides and back subglabrous to glabrous, basalmost 7–8 mm sericeous, 8.5–18 cm in cauline leaves; petiole green, when present, bearing a groove adaxially, sparsely tomentose just below pulvinus, glabrous basally, (0–)0.6–1.8 cm in cauline leaves; pulvinus elliptic in cross-section, densely tomentose in a band adaxially, the rest glabrous, hairs to 0.6 mm, 0.25–0.4 cm in cauline leaves; leaf blade herbaceous, elliptic, apex acuminate, base obtuse, shortly abruptly attenuate, 15.5–18.5 \times 4.8–6.5 cm in cauline leaves (length:width ratios 2.45–3.3:1), lateral veins 11–14 per 3 cm, cross veinlets 33–40 per 5 mm (veins measured at midpoint of each side of blade, ruler at right angles to veins), vein angles from midrib 38° – 47° , measured at midpoint of blade, adaxial surface green, glabrous except apical 2 cm of apex pilose along very margin and into acumen, midrib minutely appressed tomentose in center, hairs colorless 0.3–0.5 mm, abaxial surface light grey-green, minutely pilose along veins, hairs 0.1–0.25 mm, additionally a row of hairs is present along the margin between the hyaline margin and outermost marginal vein in the apical two thirds, midrib pilose throughout, hairs to 0.4 mm in acumen. **Inflorescence** terminal, 1 per shoot (a new shoot may develop in the axil of the leaf subtending the inflorescence), imbricate, ellipsoid, ca. 5 \times 2.3 cm; peduncle green, glabrous, ca. 5 cm. **Bracts** ca. 8, spirally arranged, herbaceous, lowermost bract broadly transverse ovate, apex obtuse with acumen, upper ones broadly ovate, apex obtuse, margin not recurved, 1.3–1.8 \times 1.2–2 cm, each bract subtending 6 or more flower pairs, abaxial surface green, very minutely pilose near margins and apex (30 \times magnification), hairs ca. 0.1 mm, central and basal portions glabrous, adaxial surface densely pilose apically; bicarinate prophyll membranaceous, elliptic, apex obtuse to rounded, glabrous or very sparsely pilose on sides at apex, 1.5–1.6 \times 0.8–1 cm, 0.6–0.7 cm wide, carina to carina; secondary bract membranaceous, elliptic, apex obtuse to rounded, glabrous, ca. 1.6 \times 0.8 cm; bracteoles 1 per flower pair, clavicate, medial, 1.7–1.9 cm. **Flowers** open spontaneously, white. **Sepals** membranous, elliptic, obtuse to 90° , glabrous, 1.6–1.8 \times 4–5 mm. **Corolla** tube glabrous, ca. 22 mm; corolla lobes subequal, elliptic, glabrous, ca. 11–12 \times 3.5–4.5 mm. **Staminodes** 3; outer staminode subrotund, apex rounded, ca. 9 \times 8 mm; callose staminode spatulate, petaloid apically, apex rounded, ca. 9 mm; cucullate staminode ca. 5 mm; stamen with lateral petaloid appendage, ca. 1 mm wide, anther 2.5 mm; ovary glabrous, ca. 2.5 \times 1.5 mm. **Capsule** unknown.

Distribution.—*Calathea peregrina* is known only from the type, collected near Masargandi, Darien Prov., in moist tropical forest.

DISCUSSION

Calathea peregrina belongs to *Calathea* section *Breviscapus* Benth. It is most closely related to *C. portobelensis*, both having basal and cauline leaves, the inflorescence borne on the leafy shoot, spirally arranged green bracts, clavicate bracteoles and white flowers. It differs from *C. portobelensis* in the narrower angle of divergence of the lateral veins from the midrib, 38° – 47° vs. 46° – 62° , the more widely spaced lateral veins, 11–14 vs. 17–22 per 3 cm, usually a single minor vein rather than 3 between the major lateral veins and a single clavicate bracteole vs. 2 lateral, membranous bracteoles in addition to a medial, clavicate bracteole per flower pair.

Etymology.—The specific epithet *peregrina*, meaning foreign, exotic or strange is in reference to the species turning up as the joker in the deck, something foreign or strange. It was only in going through a pile of *Calathea portobelensis* specimens to compare with another similar species, that the specimen of *C. peregrina* struck one as clearly the odd one out.

ACKNOWLEDGMENTS

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